UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/661,635	09/13/2000	Rupert Julian Alexander Brauch	10970905-2(4671-20)	9173

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IP Administration
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EXAMINER
PHAN, THAI Q

ART UNIT	PAPER NUMBER
2128	

DATE MAILED: 12/31/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

	Application No.	Applicant(s)
Office Action Summary	09/661,635	Rupert Brauch
	Examiner	Art Unit
	Thai Phan	2128

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE ___3___ MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on *Aug. 11, 2003* _____.

2a) ☐ This action is **FINAL.**   2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) *1-3, 8-12, and 21* _____ is/are pending in the application.

    4a) Of the above, claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) *1-3, 8-12, and 21* _____ is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are a) ☐ accepted or b) ☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.

    If approved, corrected drawings are required in reply to this Office action.

12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a) ☐ All b) ☐ Some* c) ☐ None of:

      1. ☐ Certified copies of the priority documents have been received.

      2. ☐ Certified copies of the priority documents have been received in Application No. _____.

      3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    *See the attached detailed Office action for a list of the certified copies not received.

14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

    a) ☐ The translation of the foreign language provisional application has been received.

15) ☒ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s). _____

4) ☐ Interview Summary (PTO-413) Paper No(s). _____

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____

DETAILED ACTION

This Office Action is in response to applicant's amendment, filed on Aug. 11, 2003.

Claims 1-3, 8-12, and 21 are pending in this application.

Information Disclosure Statement

1.   The information disclosure statement filed 09/13/2000 has been considered and placed in

the record.

Drawings

2.   This application has been filed with informal drawings which are acceptable for

examination purposes only. Formal drawings will be required when the application is allowed.

Claim Rejections - 35 USC § 112

3.   Due to applicant's argument in the response, the 35 U.S.C. 112, second paragraph,

rejection has been withdrawn.

Claim Rejections - 35 USC § 103

4.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth
> in section 102 of this title, if the differences between the subject matter sought to be patented and the prior
> art are such that the subject matter as a whole would have been obvious at the time the invention was made
> to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be
> negatived by the manner in which the invention was made.

5.   Claims 1-3, 8-12, and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Hohensee et al., US patent no. 5,778,211, in views of Ross et al., US patent no. 5,915,117 and

Le, Bich-Cau, US patent no. 6,631,514 B1.

As per claim 1, Hohensee discloses a method and system for handling exceptions in an

emulator program running in a digital computer system, having memory and operating system,

very identical to the claimed invention (Abstract, Fig. 1, Summary of the Invention, col. 3, line 1

to col. 4, line 23). According to Hohensee, the method of exception handling includes steps of

receiving an exception from the operating system upon execution of emulator program or

emulation program or during operation of the emulator program (col. 9, line 3 to col. 10, line 9),

determining whether the received exception was caused by the emulator program itself or

by the user program (col. 7, line 41 to col. 8, line 4, cols. 13-14, for instance) for handling

exceptions, and if the exception was caused by the emulator program, handling the exception in

the emulator program in a precise exception handling model (Background of the Invention,

col. 7, line 41 to col. 8, line 55, for example). It can handle exception by itself because the

emulator program is executed and run under control of the host operating system, and the host

operating control system is able to handle exception caused by the emulator system (col. 3, lines

3-58). Hohensee does not expressly disclose the claimed feature of without delivering the

exception caused by emulator program to the emulated user program in a disclosed context.

Such feature of without delivering the exception to the emulated user program in the disclosed

context or deferring the exception to its destination is well-known in the art. In fact, Ross

teaches method and system for handling exception using deferral exception handling to reduce

latency and to speculative execution (see Summary of the Invention, Figs. 1-2, col. 4, lines 28-56,

col. 7, line 46 to col. 8, line 67, col. 9, lines 22-33, for example). Further, Le teaches a method

and system for handling exception caused by the emulator internally without delivering the

exception to the emulated user program or legacy codes (col. 6, lines 12-64, col. 7, lines 15-25,

for example) in order to optimize speculative in reordering of instructions and to independently

handle exception caused by the emulator program to optimize run time compilation as taught in

col. 8, lines 21-35.

This would motivate practitioner in the art at the time of the invention was made to

combine Ross teaching of deferral exception handling into Hohensee in order to defer exception

handling to destination source and without delivering the exception to the external source to

reduce latency and maximize speculative execution as taught in Le (cols. 6, 7) to maximize

performance over a broadest range of software application in handling speculative.

As per claim 2, Ross and Le disclose trap or exception type (see Ross, col. 4, lines 28-56,

col. 7, lines 46-59, and col. 9, lines 1-33, for instance), determining whether the identified type of

exception is currently blocked by the user program for deferral exception, and if not then

delivering the notification of exception to the user program as claimed (col. 4, lines 28-56, col. 7,

lines 46-59, col. 9, lines 1-33, for instance).

As per claim 3, Hohensee discloses holding or withholding delivery of exception from the

user program for subsequent processing. Ross teaches deferral exceptions carrying features of

holding or withholding exception as claimed (Summary of the Invention), and Lee teaches

without delivering the exception to the emulated user program to optimize speculative in

reordering of instructions as taught in Le.

As per claim 8, Hohensee disclosure would require creating and maintaining status mask

for exceptions to defer for subsequent processing. Ross discloses status mask as claimed (Figs. 1

and 2).

As per claim 9, Hohensee disclosed a data structure would be used to implement

exception handling. It would also require a data structure to implement status mask within the

emulator memory.

As per claims 10-12, Hohensee disclosed synchronizing exceptions so that the program

execution can continue with the next instruction, determining whether the exception is an

interrupt system call (cols. 9-14), and determining whether the exception is asynchronous, an

interrupt system call, if not, marking for pending, delivering the exception to the user program to

continue executing the program instruction as claimed.

As per claim 21, Hohensee disclosed various exceptions, precise exception handling

model for handling exceptions, and floating point arithmetic exception (Background of the

Invention, cols. 9-14) that include privilege fault and floating point exceptions as claimed.

Double Patenting

6.   Claims 1-3, 8-12, and 21 are rejected under the judicially created doctrine of

obviousness-type double patenting as being unpatentable over claims 1-19 of U.S. Patent No.

6,173,248 B1. Although the conflicting claims are not identical, they are not patentably distinct

from each other because they all are directed to method and system for processing an exception

in an emulator program running on a digital computer having a memory and under control of an

operating system.   The emulator program in the issue patent is for emulating execution of a user

program constructed for execution on a legacy platform with feature limitations cover the

presently claimed invention. Claims 1-3, 8-12, and 21 are obviously simpler variation of the

claims in the patent. In other words, claims 1-3, 8-12, and 21 are to broaden the claimed features

in the US patent 6,173,248 B1.

Response to Arguments

7.   Applicant's arguments with respect to claims 1-3, 8-12, and 21 have been considered but

are moot in view of the new ground(s) of rejection.

Conclusion

8.   Any inquiry concerning this communication or earlier communications from the examiner

should be directed to examiner Thai Phan whose telephone number is (703) 305-3812.

Any inquiry of a general nature or relating to the status of this application should be

directed to the Group receptionist whose telephone number is (703)305-3900.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

P.O. Box 1450
Alexandria, Va 22313

or faxed to:

(703) 872-9306, (for formal communications intended for entry)

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal

Drive, Arlington. VA., Sixth Floor (Receptionist).

December 29, 2003

Thaiphan
Patent Examiner
Thai Phan
AU: 2128